
A Second Species of the Malagasy Genus *Secamonopsis* (Asclepiadaceae)

Laure Civeyrel

Laboratoire de Palynologie & Paleoenvironnements, ISEM-EPHE, Université Montpellier II
34095, Montpellier cedex 05, France

Jens Klackenberg

Naturhistoriska riksmuseet, Sektionen för fanerogambotani, S-104 05 Stockholm, Sweden

ABSTRACT. *Secamonopsis microphylla* sp. nov., from dry southern Madagascar, is described, illustrated, and compared to *S. madagascariensis* Jumelle, the only other known species of this genus.

While preparing a treatment of the tribe Secamoneae (Asclepiadaceae) for the *Flore de Madagascar et des Comores*, and during the course of a survey of the pollen structure within this tribe, a new species, *Secamonopsis microphylla*, was encountered. This adds a second species to the hitherto monotypic Malagasy genus *Secamonopsis* Jumelle.

Secamonopsis microphylla Civeyrel & Klackenberg, sp. nov. TYPE: Madagascar. Toliara Prov.: 17 km E of Toliara on Road No. 7, E of "Montagne de la Table," alt. 110 m, 20 Nov. 1994, Civeyrel 1242 (holotype, P; isotypes, K, S, TAN). Figure 1.

Species haec a *Secamonopsi madagascariensi* habitu fruticoso, brachyblastis foliiferis, inflorescentiis 1–3 floris et foliis minoribus differt.

Shrub, prostrate or erect, up to 1.5 m tall, with young branches \pm densely covered by short appressed hairs, glabrescent. Leaves mostly on opposite brachyblasts, grayish green with reddish margin; blade 5–10 \times 2–3 mm, oblong to narrowly obovate, tapering at base into a distinct petiole, usually rounded but sometimes acute or truncate at the apex, with sparse to rather dense short appressed hairs on both sides, sparser above, with even margin; venation with only midrib visible; epidermal cells of lower leaf surface tuberculate-papillate; petiole 1–2 mm long, with appressed hairs. Flowers pentamerous, actinomorphic, usually solitary but sometimes 2–3 on the brachyblasts; pedicels 1–2 mm long; bracts 2 or 3, 1–3 mm long. Calyx lobes free, 1.8–2.4 \times 1.5–2.0 mm, concave, longer than the corolla tube, obovate to \pm circular,

rounded at the apex, hairy outside and along the margin, glabrous inside, without collectors. Corolla imbricate, with lobes fused for ca. $\frac{2}{5}$ of their length into a tube, yellow; tube 0.9–1.2 mm long, with long white retrorse hairs in upside down Vs with 5 bunches of erecto-patent hairs at the top below the lobe sinuses; lobes 1.5–1.7 \times 1.2–1.4 mm, oblong, rounded at the apex, thick, glabrous. Stamens inserted at base of corolla tube; staminal column 0.6–0.8 mm long; filaments with horny margins distinctly projecting at base; thecae papillately hairy at the top. Coronal lobes inserted along lower half of anthers, 0.3–0.5 mm long, dorsiventrally compressed, \pm as broad as long, rounded at the apex, straight, much shorter than the staminal column, glabrous. Pollinia seemingly 2 per corpusculum but in fact 4 glued together in pairs, ca. 0.1 mm long, \pm ascending, lens-shaped to ellipsoid, attached to 2 narrow distinct caudicles on an ellipsoid soft corpusculum. Stigma head slightly projecting above the staminal column; narrower upper part ca. 0.4 mm long, slightly bifid at the apex. Follicles usually paired, ca. 4 \times 0.5 cm, narrowly ovoid, glabrous, horizontal. Seeds ca. 5 mm long; hairs 7–15 mm long.

Secamonopsis microphylla is sympatric with the hitherto only known species of *Secamonopsis*, *S. madagascariensis* Jumelle (1908: 6), but seems to be restricted to calcareous soil with rather sparse shrub vegetation while *S. madagascariensis* is usually found in gneissic areas. It is distributed in the dry southwestern part of Madagascar and has not been found outside the Southern Domain phytogeographical area (after Humbert, 1955). Flowering November to March.

Secamonopsis microphylla clearly belongs to the genus *Secamonopsis*, although it differs considerably in habit from *S. madagascariensis*. It has the same structure of the gynostegium and the characteristic pollinaria as in *S. madagascariensis*. The

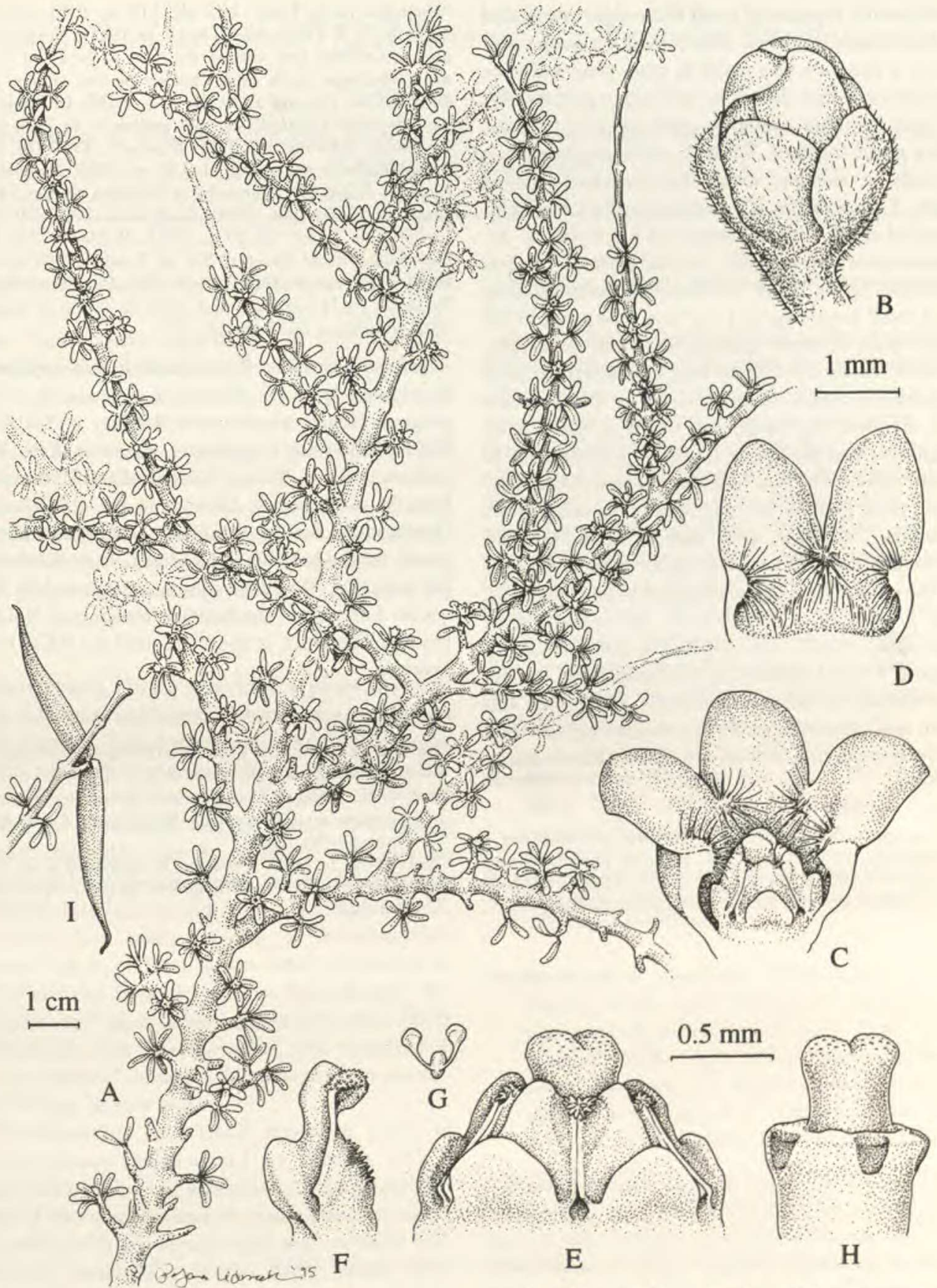


Figure 1. *Secamonopsis microphylla* Civeyrel & Klackenberg. —A. Habit. —B. Flower in bud. —C. Gynostegium and portion of corolla. —D. Portion of corolla from within. —E. Gynostegium. —F. Anther in lateral view. —G. Pollinarium. —H. Stigma head. —I. Follicles. A. Phillipson 3000. B–H. Civeyrel 1242. I. Civeyrel 1239.

pollinarium consists of a soft ellipsoidal to rounded corpusculum furnished with a long slit facing outward, a structure also found in other genera of tribe Secamoneae, but differs by its unique pair of long, curved, resilient caudicles each carrying two pollinia glued together. While *S. madagascariensis* is usually a slender, rather few-branched twining herb, *S. microphylla* is a much-branched, low woody shrub with the leaves on brachyblasts. *Secamonopsis microphylla* is furthermore distinguished by its short 1–3-flowered inflorescences and small leaves up to 1 cm long, compared to the large many-flowered inflorescences and the usually narrow leaves 1.5–10 cm long characteristic of *S. madagascariensis*. Characteristic for both species are the lower leaf epidermis, which is tuberculate-papillate, and the thecae furnished with papillae or small hairs at the top. In *S. madagascariensis*, however, these papillae are larger and form two distinct marginal crests at each anther, becoming dark when dry. Furthermore, dark spots on the outer face of the corolla lobes, when dry, due to resin deposits, are present in *S. microphylla*, but lacking in *S. madagascariensis*. The corolla has imbricate aestivation, a rare condition in Asclepiadaceae but not uncommon in Malagasy *Secamone*, where both valvate and imbricate, as well as sinistrosely and dextrorsely contorted flowers are found (Klackenberg, 1992).

Paratypes. MADAGASCAR. **Toliara:** de Ranopiso à Amboasary, 100–150 m, 1967, *Bernardi 11560* (P); env. de Tuléar-Table, 1961, *Chauvet 39* (P); route de Sarodrano, *Chauvet 195* (P); 15 km E of Toliara on Road No. 7,

“Montagne de la Table” hill, alt. 110 m, 1994, *Civeyrel 1206* (K, P, S, TAN); 20–25 km E of Toliara in direction of river Onilahy, first road on the right of the Road No. 7 after “Montagne de la Table” before the first village, 50–60 m, 1994, *Civeyrel 1239* (K, P, S, TAN); La Table en bas, *Dequaire 27491, 27492* (P); colline de la Table près de Tuléar, 100–140 m, 1934, *Humbert 14388* (P); Cap Sainte-Marie et ses abords, 1–150 m, 1955, *Humbert & Capuron 29296* (P); Ampanihy to Androka, 36 km SW of Ampanihy, 150 m alt., 1990, *Liede et al. 2679* (MO, P); La Table de Tuléar, alt 20 m, 1971, *Mabberley 944* (K); Cap Sainte Marie Reserve, SW of Tsiombe, 200 m alt., 1988, *Phillipson 3000* (K, MO, P); SE of Tuléar on Route Nationale 7, 15 km from town near la Table, 75 m alt., 1988, *Phillipson 3037* (K, MO, P).

Acknowledgments. This research was supported by a grant from the European community in the program Human Capital and Mobility n° ERBCH-BICT-930564 for L. Civeyrel, when at Kew. The authors thank G. Lucas, Keeper of the Herbarium, Kew, M. Andrianjafy, Director of the P.B.Z.T., the Direction du Service des Eaux et Forêt in Madagascar for the help they provided L. Civeyrel during her field trip. The illustration was prepared by Pollyanna Lidmark at the Swedish Museum of Natural History. This work is the n° 95–039 for ISEM Publications.

Literature Cited

- Humbert, H. 1955. Les territoires phytogéographiques de Madagascar. *Année Biol.*, sér. 3, 31: 439–448.
- Jumelle, H. 1908. L'Angalora et le Kompitso, Lianes à Caoutchouc du sud-ouest de Madagascar. *Caoutchouc & Gutta-percha*, s.n.
- Klackenberg, J. 1992. Taxonomy of *Secamone* s. lat. (Asclepiadaceae) in the Madagascar Region. *Opera Bot.* 112: 5–127.